

AMENDMENTS TO THE CLAIMS:

Amend the claims as follows:

Claims 1-74. (Canceled)

75. (Currently Amended) An isolated Hepatitis C virus polynucleic acid comprising a nucleotide sequence of one of the HCV types 7, 9 or 11, or of one of the subtypes 1d, 1e, 1f, 1g, 2e, 2f, 2g, 2h, 2i, 2k, 2l, 3g, 4k, 4l or 4m, wherein said types or subtypes comprise the following prototype sequences:

SEQ ID NO: 43, 45, 47, 89, 91 or 93 for HCV type 7,

SEQ ID NO: 41 or 95 for HCV type 9,

SEQ ID NO: 99, 101, 103 or 105 for HCV type 11,

SEQ ID NO: 1, 3, 5, 7, 53, 55 or 57 for HCV subtype 1d,

SEQ ID NO: 9, 59 or 61 for HCV subtype 1e,

SEQ ID NO: 11 or 63 for HCV subtype 1f,

SEQ ID NO: 65 or 67 for HCV subtype 1g,

SEQ ID NO: 13, 15 or 69 for HCV subtype 2e,

SEQ ID NO: 17 or 71 for HCV subtype 2f,

SEQ ID NO: 19 for HCV subtype 2g,

SEQ ID NO: 21, 23 or 73 for HCV subtype 2h,

SEQ ID NO: 25 for HCV subtype 2i,

SEQ ID NO: 75 or 77 for HCV subtype 2k,

SEQ ID NO: 79 for HCV subtype 2l,

SEQ ID NO: 81 for HCV subtype 3g,

SEQ ID NO: 27, 29, 31, 33, 35, 37 or 83 for HCV subtype 4k,

SEQ ID NO: 39 or 85 for HCV subtype 4l,

SEQ ID NO: 87 for HCV subtype 4m;

or the full complement of any one of SEQ ID NOs: 1, 3, 5, 7, 9, 11, 13, 15, 17, 19, 21, 23, 25, 27, 29, 31, 33, 35, 37, 39, 41, 43, 45, 47, 53, 55, 57, 59, 61, 63, 65, 67, 69, 71, 73, 75, 77, 79, 81, 83, 85, 87, 89, 91, 93, 95, 99, 101, 103 or 105 .

Claims 76-78. (Canceled)

79. (Currently Amended) A polynucleic acid selected from

(i) a polynucleic acid encoding an HCV polyprotein comprising in its amino acid sequence at least one amino acid sequence chosen from the group consisting of SEQ ID NOs: 107, 109, 110, 112-116, 120-133, 135-142, 144-147, 149-165, 167, 169-181, 183, 185-200, and 202-207,

(ii) or a polynucleic acid comprising the full complement of a polynucleic acid encoding an HCV amino acid sequence selected from the group consisting of SEQ ID NOs: 107, 109, 110, 112-116, 120-133, 135-142, 144-147, 149-165, 167, 169-181, 183, 185-200 and 202-207.

Claim 80. (Canceled)

81. (Previously Presented) A recombinant polypeptide encoded by a polynucleic acid selected from the group consisting of

(i) a polynucleic acid comprising a nucleotide sequence of one of the HCV types 7, 9 or 11, or of one of the subtypes 1d, 1e, 1f, 1g, 2e, 2f, 2g, 2h, 2i, 2k, 2l, 3g, 4k, 4l or 4m, wherein said types or subtypes comprise the following prototype sequences,

SEQ ID NO: 43, 45, 47, 89, 91 or 93 for HCV type 7,

SEQ ID NO: 41 or 95 for HCV type 9,

SEQ ID NO: 99, 101, 103 or 105 for HCV type 11,

SEQ ID NO: 1, 3, 5, 7, 53, 55 or 57 for HCV subtype 1d,

SEQ ID NO: 9, 59 or 61 for HCV subtype 1e,

SEQ ID NO: 11 or 63 for HCV subtype 1f,

SEQ ID NO: 65 or 67 for HCV subtype 1g,

SEQ ID NO: 13, 15 or 69 for HCV subtype 2e,

SEQ ID NO: 17 or 71 for HCV subtype 2f,

SEQ ID NO: 19 for HCV subtype 2g,

SEQ ID NO: 21, 23 or 73 for HCV subtype 2h,

SEQ ID NO: 25 for HCV subtype 2i,

SEQ ID NO: 75 or 77 for HCV subtype 2k,

SEQ ID NO: 79 for HCV subtype 2l,

SEQ ID NO: 81 for HCV subtype 3g,

SEQ ID NO: 27, 29, 31, 33, 35, 37 or 83 for HCV subtype 4k,

SEQ ID NO: 39 or 85 for HCV subtype 4l, and

SEQ ID NO: 87 for HCV subtype 4m;

(ii) a polynucleic acid encoding an HCV polyprotein comprising in its amino acid sequence at least one amino acid sequence chosen from the group consisting of SEQ

ID NOs: 107, 109, 110, 112-116, 120-133, 135-142, 144-147, 149-165, 167, 169-181, 183, 185-200, and 202-207; and

(iii) a polynucleic acid encoding a HCV polyprotein comprising an amino acid sequence of one of the HCV types 7, 9 or 11, or of one of the HCV subtypes 1d, 1e, 1f, 1g, 2e, 2f, 2g, 2h, 2i, 2k, 2l, 3g, 4k, 4l or 4m, wherein said types or subtypes comprise the following amino acid prototype sequences,

SEQ ID NO: 44, 46, 48, 90, 92 or 94 for HCV type 7,

SEQ ID NO: 42 or 96 for HCV type 9,

SEQ ID NO: 100, 102, 104 or 106 for HCV type 11,

SEQ ID NO: 2, 4, 6, 8, 54, 56 or 58 for HCV subtype 1d,

SEQ ID NO: 10, 60 or 62 for HCV subtype 1e,

SEQ ID NO: 12 or 64 for HCV subtype 1f,

SEQ ID NO: 66 or 68 for HCV subtype 1g,

SEQ ID NO: 14, 16 or 70 for HCV subtype 2e,

SEQ ID NO: 18 or 72 for HCV subtype 2f,

SEQ ID NO: 20 for HCV subtype 2g,

SEQ ID NO: 22, 24 or 74 for HCV subtype 2h,

SEQ ID NO: 26 for HCV subtype 2i,

SEQ ID NO: 76 or 78 for HCV subtype 2k,

SEQ ID NO: 80 for HCV subtype 2l,

SEQ ID NO: 82 for HCV subtype 3g,

SEQ ID NO: 28, 30, 32, 34, 36, 38 or 84 for HCV subtype 4k,

SEQ ID NO: 40 or 86 for HCV subtype 4l, and

SEQ ID NO: 88 for HCV subtype 4m

82. (Currently Amended) A method for production of a recombinant polypeptide, comprising:

transformation of a cellular host with a recombinant vector, in which a polynucleic acid according to any one of claims 75[[,]] and 79, ~~86 and 87~~ has been inserted under the control of regulatory elements, the polynucleic acid thus being an insert,

culturing said transformed cellular host under conditions enabling the expression of said insert, and

harvesting said polypeptide.

83. (Currently Amended) A recombinant expression vector comprising a polynucleic acid according to any one of claims 75[[,]] and 79, ~~86 and 87~~ operably linked to prokaryotic, eukaryotic or viral transcription and translation control elements.

84. (Previously Presented) A host cell transformed with a recombinant vector according to claim 83.

85. (Currently Amended) A peptide corresponding to an amino acid sequence encoded by one of the polynucleic acids according to any one of claims 75[[,]] and 79, ~~86 and 87~~.

86. (Currently Amended) An isolated HCV polynucleic acid consisting of at least 12 contiguous nucleotides of a polynucleic acid of claim 75 wherein the amino acid sequence encoded by said at least 12 contiguous nucleotides comprises at least one of the following amino acid residues of an HCV polyprotein:

~~L130, L140, E235, I285, A58, N71, D106, E150, N217, L235, E260, I300,~~
V2652, Q2653, K2663, A2667, I2707, A2709, Y2730, L2746, P2749, T2752, V2752,
D2753, S2646, or G2753 for HCV type 7,

~~L130, L140, E235, I285, A58, N71, D106, E150, N217, L235, E260, I300,~~
G2649, F2727, T2728 or I2752 for HCV type 9,

E2686, K2746, Q2752, D2754, V44 for HCV type 11,

D60, D72, H81, F181, T190, H192, S217, Y223, M240, or R272 for HCV
subtype 1d,

A49, E68, A2650 or V2746 for HCV subtype 1e,

S148, T150, G160, S196, D199, D256, E257, T294, S295, or I2745 for HCV
subtype 1f,

H101, S110, Q153, F155, D157, A2719, or E2729 for HCV subtype 1g,

Q199, F236, K250, R261, A294, Y299, or H2697 for HCV subtype 2e,

P49, N197, F200, A208, F237, R250, A291, or A2748 for HCV subtype 2f,

L231, N249, V268, or S301 for HCV subtype 2g,

H199, K217, H232, Q233, F290, I299, A2648, or I2741 for HCV subtype 2h,

R197 or W231 for HCV subtype 2i,

Q55, E165, N199, T200, E296, P316, Q2686 or R2750 for HCV subtype 2k,

M2719, or D2728 for HCV subtype 2l,

K2692, Y2708, E2751, A2755, L2756, or R2757 for HCV subtype 3g,

I169, T192, A222, A252 or N2752 for HCV subtype 4k,

S216, M256, S272, L2681, or S2752 for HCV subtype 4l,

Q2756 for HCV subtype 4m;

with said notation being composed of a letter representing the amino acid residue by its one-letter code, and a number representing the amino acid numbering as shown in Figures 2, 4 and 6 ; or the complement of thereof.

87. (Currently Amended) A

(i) polynucleic acid encoding a HCV polyprotein comprising an amino acid sequence of one of the HCV types 7, 9 or 11, or of one of the HCV subtypes 1d, 1e, 1f, 1g, 2e, 2f, 2g, 2h, 2i, 2k, 2l, 3g, 4k, 4l or 4m, wherein said types or subtypes comprise the following amino acid prototype sequences:

SEQ ID NO: 44, 46, 48, 90, 92 or 94 for HCV type 7,

SEQ ID NO: 42 or 96 for HCV type 9,

SEQ ID NO: 100, 102, 104 or 106 for HCV type 11,

SEQ ID NO: 2, 4, 6, 8, 54, 56 or 58 for HCV subtype 1d,

SEQ ID NO: 10, 60 or 62 for HCV subtype 1e,

SEQ ID NO: 12 or 64 for HCV subtype 1f,

SEQ ID NO: 66 or 68 for HCV subtype 1g,

SEQ ID NO: 14, 16 or 70 for HCV subtype 2e,

SEQ ID NO: 18 or 72 for HCV subtype 2f,

SEQ ID NO: 20 for HCV subtype 2g,

SEQ ID NO: 22, 24 or 74 for HCV subtype 2h,

SEQ ID NO: 26 for HCV subtype 2i,

SEQ ID NO: 76 or 78 for HCV subtype 2k,

SEQ ID NO: 80 for HCV subtype 2l,

SEQ ID NO: 82 for HCV subtype 3g,

SEQ ID NO: 28, 30, 32, 34, 36, 38 or 84 for HCV subtype 4k,

SEQ ID NO: 40 or 86 for HCV subtype 4l,

SEQ ID NO: 88 for HCV subtype 4m;

or

(ii) polynucleic acid encoding an HCV polyprotein comprising in its amino acid sequence at least one amino acid sequence chosen from the group consisting of SEQ ID NOs: 107, 109, 110, 112-116, 120-133, 135-142, 144-147, 149-165, 167, 169-181, 183, 185-200, and 202-207;

or

(iii) HCV polynucleic acid sequence encoding an HCV amino acid sequence, said polynucleic acid sequence consisting of at least 12 contiguous nucleotides of a polynucleic acid of part (i) wherein the HCV amino acid sequence encoded by said at least 12 contiguous nucleotides comprises at least one of the following amino acid residues of an HCV polyprotein:

L130, L140, E235, I285, A58, N71, D106, E150, N217, L235, E260, I300,
V2652, Q2653, K2663, A2667, I2707, A2709, Y2730, L2746, P2749, T2752, D2753,
V2752, S2646, or G2753 for HCV type 7,

L130, L140, E235, I285, A58, N71, D106, E150, N217, L235, E260, I300,

G2649, F2727, T2728 or I2752 for HCV type 9,

E2686, K2746, Q2752, D2754, or V44 for HCV type 11,

D60, D72, H81, F181, T190, H192, S217, Y223, M240, or R272 for HCV

subtype 1d,

A49, E68, A2650 or V2746 for HCV subtype 1e,

S148, T150, G160, S196, D199, D256, E257, T294, S295, or I2745, for HCV

subtype 1f,

H101, S110, Q153, F155, D157, A2719, or E2729 for HCV subtype 1g,

Q199, F236, K250, R261, A294, Y299, or H2697 for HCV subtype 2e,

P49, N197, F200, A208, F237, R250, A291, or A2748 for HCV subtype 2f,

L231, N249, V268, or S301 for HCV subtype 2g,

H199, K217, H232, Q233, F290, I299, A2648, or I2741 for HCV subtype 2h,

R197 or W231 for HCV subtype 2i,

Q55, E165, N199, T200, E296, P316, Q2686 or R2750 for HCV subtype 2k,

M2719, or D2728 for HCV subtype 2l,

K2692, Y2708, E2751, A2755, L2756, R2757 or D2752 for HCV subtype 3g,

I169, T192, A222, A252 or N2752 for HCV subtype 4k,

S216, M256, S272, L2681, or S2752 for HCV subtype 4l,

Q2756 for HCV subtype 4m; with said notation being composed of a letter representing the amino acid residue by its one-letter code, and a number representing the amino acid numbering as shown in Figures 2, 4 and 6 ; or

(iv) polynucleic acid which is the full complement of any one of SEQ ID NOs: 1, 3, 5, 7, 9, 11, 13, 15, 17, 19, 21, 23, 25, 27, 29, 31, 33, 35, 37, 39, 41, 43, 45, 47, 53,

55, 57, 59, 61, 63, 65, 67, 69, 71, 73, 75, 77, 79, 81, 83, 85, 87, 89, 91, 93, 95, 99, 101, 103 or 105 .

88 (new). A method for production of a recombinant polypeptide, comprising:
transformation of an appropriate cellular host with a recombinant vector, in which a polynucleic acid according to any one of claims 86 and 87 has been inserted under the control of the appropriate regulatory elements, the polynucleic acid thus being an insert,
culturing said transformed cellular host under conditions enabling the expression of said insert, and
harvesting said polypeptide.

89 (new). A recombinant expression vector comprising a polynucleic acid according to any one of claims 86 and 87 operably linked to prokaryotic, eukaryotic or viral transcription and translation control elements.

90 (new). A host cell transformed with a recombinant vector according to claim 89.

91 (new). A peptide corresponding to an amino acid sequence encoded by one of the polynucleic acids according to any one of claims 86 and 87.